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Developing supplementary reading materials to promote critical thinking for the X grade students of vocational high school based on the 2013 Curriculum

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Abstract: This research is aimed at developing supplementary reading materials to promote critical thinking as a part of the 21st-century competencies (Critical thinking, Creativity and Innovation, Communication and Collaboration) and to reveal the effectiveness of the developed product. The methodology was Research and Development by Borg and Gall (1983). The research steps consist of three main stages; (1) preliminary study covering document analysis, classroom observation, and need analysis, (2) development covering drafting, internal experts judgement, revision, a prototype of the product, (3) field testing covering try out, reflection and interview, external expert judgement, revision, and final product. In analyzing the data, the researcher used descriptive qualitative research. It was adapted from Qualitative Data Analysis by Miles, Huberman & Saldana (1994) that are condensing data, displaying data, drawing, and verifying conclusion. The results of the preliminary study showed that supplementary reading materials to promote the 4'Cs were needed. The textbook evaluation revealed that there were four chapters (chapter 1, chapter 5, chapter 8 and chapter 12) which need to be developed. In need analysis, the researcher interviewed three English teachers and nine students who were in low, middle and high level from the same class. Based on the data, the teachers and the students required the developed product. The researcher then made abound of drafts which were then revised into the prototype of the product. The developed product was tried out in class X TKJ A SMKN 1 Saptosari by having collaboration with the fellow teachers. To catch the real situation, the researcher recorded the teaching and learning process, wrote the transcripts, noted the classroom observation, and did reflection. After the final revision, the supplementary reading materials came to the final product. The try out proved that the developed supplementary reading materials are effective in promoting critical thinking. Based on the analysis, the students are able to complete the tasks that were designed to promote critical thinking (making predictions, differentiating relevant and irrelevant information, relating different concepts, thinking inductively, and comparing or analyzing the texts).

Keywords: The 4'Cs; The 2013 Curriculum; Reading Materials Development

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Introduction

Curriculum is one of the main parts in education since it contains the determined goals, contents, and strategic requirements to be reached by the end of the learning process. Ideally, it is designed by taking into accounts to the four underlying factors namely needs analysis, environment, principles, and materials sequencing as mentioned by Nation and Macalister (2010). To deal with these principles, curriculum stays dynamic. The change of curriculum is such an undoubtedly fact in any nations as well as Indonesia. Some problems then occur when the teachers do not have adequate capability in understanding and interpreting what is really desired by the recent curriculum.

The change of curriculum in Indonesia is aimed at accomodating and supporting the 21st century education that integrate knowledge, attitude and skills. The students are expected to have some competencies that cover critical thinking, communication skills, creativity and innovation, and collaboration (the 4'Cs) to prepare themselves facing the globalization. To achieve these competencies, every phase and parts of the teaching and learning process must be designed in line with the learning goals.



The Ministry of National Education and Culture has actually prepared textbooks to facilitate the teaching process but unfortunately, there are no sufficient tasks in the textbook concerning with reading that support the students to gain skills and competencies in critical thinking. Some indicators of the 4Cs especially critical thinking proposed by the Ministry of Education and Culture (2017) are not all covered in the reading tasks of the textbook.

In critical thinking, the tasks do not really promote inductive way of thinking since some of the tasks has started from general to specific terms. The reading tasks also do not really convey the understanding interconnections within thoughts based on the situation. Furthermore, the reading tasks do not give enough chance for the learners to evaluate and determine effective consideration one concept to another as well as differentiating relevant and irrelevant information and do not really give chance to the students to create solutions for any problems both generally and privately.

This research therefore is aimed at developing supplementary reading materials to promote the critical thinking and to reveal the effectiveness of the developed product.

Literature Review

The 2013 Curriculum in Vocational High School

The 2013 Curriculum is basically the improvement of KTSP Curriculum. It is purposed to relate the present needs and situations. As the perfection of KTSP, the 2013 Curriculum does not stay far from it especially from the learning goals. The 2013 Curriculum organized based on the core competence of spiritual, social, knowledge and skills that are formulated into a systematic way.

Priyana (2012) notes that 2013 Curriculum focused to develop the student's ability to communicate in the target language orally and in writing accurately and appropriately in the four language skills in a variety of contexts for varied purposes using a range of text types and language functions, to equip the students with adequate knowledge about texts, particularly social function, text structure, grammar, and vocabulary, and to develop acceptable behaviour in personal, social, academic, and professional contexts. It in line with what is noted by Brian Tomlinson (2001) that introduction materials can be; Informative (informing the learner about the target language) Instructional (guiding the learner in practising the language) Experiential (providing the learner with experience of the language in use) Eliciting (encouraging the learner to use the language) Exploratory (helping the learner to make discoveries about the language).

The 21st Century Competencies

The 2013 Curriculum is basically implemented to support the 21st century education goals in which the students need to have the 4Cs competencies. The Ministry of Education and Culture notes that the 4Cs should be implemented in the teaching and learning process as stated in Implementation of the 21st Century Life Skills in Lesson Plan (Ministry of Education and Culture: 2017). According to Beyer (1985), critical thinking is an ability to determining the credibility of a source, differentiate between the relevant and irrelevant things, differentiate some facts from an evaluation, identify and evaluate the spoken assumptions, identify the bias, identify the certain point of views, evaluate suggested evidence to support the facts. It can be also written in details that: (1) Use the deductive and inductive way of thinking; (2) Understanding interconnections within thoughts based on the situation; (3) Evaluating and determining effective consideration one concept to another; (4) Evaluating the results and setting up connections between information and arguments; (5) Organising and interpreting information through best analysis; (6) Creating solutions for any problems both generally and privately; (7) Using the capability to solve problems; (8) Arranging and conveying, analysing and finishing a problem.

Learning Materials in 2013 Curriculum

The English learning material for vocational high school students are divided into three main types of text namely; (1) interpersonal, (2) transactional, and (3) functional. The text of interpersonal functioning to maintain interpersonal relationships; text of transactional function to exchange information, goods and services; text of the function serves to carry out a specific task or job. The Core competence become the central point that KD were developed as illustrated in this pictures.

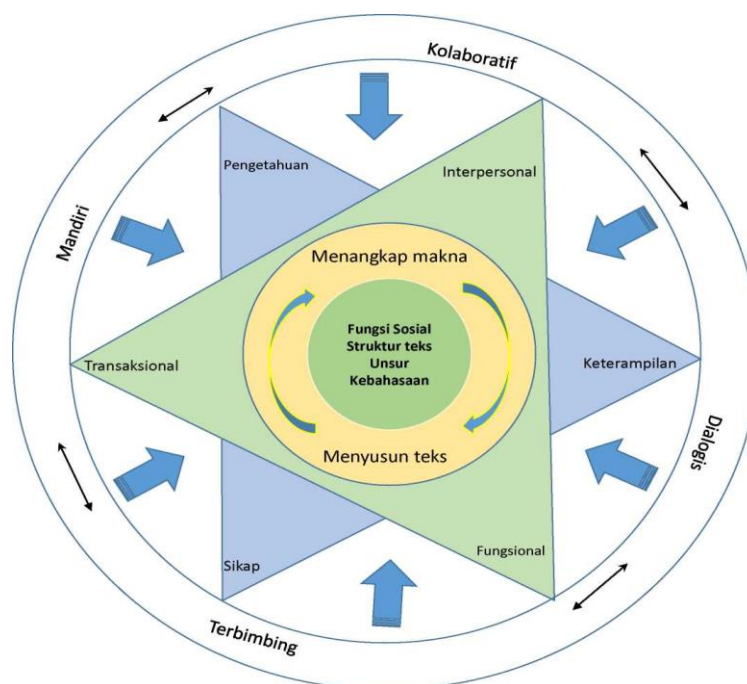


Figure 1. The elaboration of core competence, basic competence and texts Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 22 Tahun 2016 tentang Standar Proses Pendidikan Dasar dan Menengah

Reading is one of the language skills in English teaching that covered in 2013 Curriculum. It is through reading that the students will train themselves to be resourceful, being critical in thinking, and having ability in analysing any contexts. These reading skills then will be integrated with the students' skills in thinking. The reading materials represented in the Basic Competence and the learning steps. It is suggested that the teaching of reading should be improved from the lower order of thinking into higher order of thinking. It can be in the form of questions in reading comprehension. The questions toward the text are assumed to be implicit that train the students to grasp, analyze and create their own language rather than copying what are in the texts. The reading materials in 2013 Curriculum should also represent the language learning phase as in the observing, questioning, experimenting, associating, communicating and creating.

Scientific Approach in 2013 Curriculum

In the regulation of the Ministry of Education and Culture Number 65 2013, the educational process standard of basic and secondary level cover some learning phases that consists of observing, questioning, experimenting, associating and communicating. It is the representation of scientific approach. The scientific approach leads the students to be able to answer questions and solve the problems. Scientific approach in learning process is also defined as a learning process that are designed to construct students' concept, procedure, law or principles, through steps of observing, questioning, experimenting, associating and communicating.

Priyana (2012) notes that the scientific approach is not a rigid process. Scientists may use all of the steps or just some of the steps of the scientific method. They may even repeat some of the steps. The goal of the scientific method is to come up with reliable answers and solutions. In language teaching, the implementation of scientific approach can be listed as follow: (1) Observing texts and identifying what to learn; (2) Formulating questions + proposing temporary answers; (3) Collecting data/ information; (4) Analyzing data/information; (5) Communicating knowledge/ answers; (7) Creating texts.

Reading Materials Development

Tomlinson (1998) states that material development should have impacts and it can be achieved when materials have a noticeable effect on learners, that is when the learners' curiosity, interest and attention are attracted. If this is achieved, there is a better chance that some of the language in the materials will be taken in for processing. Materials can achieve impact through: (1) Novelty (e.g. unusual

topics, illustrations and activities); (2) Variety (e.g. breaking up the monotony of a unit routine with an unexpected activity; using many different text-types taken from many different types of sources; using a number of different instructor voices on a CD); (3) Attractive presentation (e.g. use of attractive colours; lots of white space; use of photographs); (4) Appealing content (e.g. topics of interest to the target learners; topics which offer the possibility of learning something new; engaging stories; universal themes; local references); and (5) Achievable challenge (e.g. tasks which challenge the learners to think).

Method

This research was conducted to develop supplementary reading materials to promote the 4Cs for Vocational High School students based on the 2013 Curriculum. The procedure used in this research is the simplified model Research and Development of Borg and Gall (1983) that consists of three main stages; the preliminary study, development and field testing. In the first step, the researcher tried to find as sufficient data as possible in underlying the research. It was done by the researcher in three ways as document analysis, classroom observation and need analysis (interviewing the teachers and interviewing the students). In the second step, the researcher developed the preliminary reading material based on the information collected in the first step. There were some steps done by the researcher in developing stage as drafting, internal expert judgements, and revision. In the last step, the researcher tested the preliminary product in the real classroom. From the observation and feedbacks of the try out, the researcher revised the reading materials into the final products.

The research was done in SMKN 1 Saptosari. In need analysis phase, the research participants were nine students from the high, middle and low level of the same class and three English teachers that consists of two teachers from SMKN 1 Saptosari who have implemented the 2013 Curriculum and one teacher from SMKN 1 Pundong who has implemented the 2013 Curriculum and was also a textbook writer. In field testing phase, the research participants was Class X TKJ A that consist of thirty two students. It was done on 24th April 2018. The process of field testing has been recorded with video and noted with interview and teaching and learning transcripts to catch the real situation during the try out.

The instruments of collecting the data used in this research is the forms of observations sheets, interview, and recorded materials. The observations were done twice; in the phase of preliminary study in which the researcher observed the teaching and learning process used the existing textbook and in the phase of try out the developed materials. The interview were conducted before and after the process of developing materials. Firstly, the interview were conducted to know the teachers and students' needs to be the inputs of the expected materials and also the perceptions of them. Secondly, the interview was also conducted to the internal and external experts to know the lacks of the developed materials so that the materials could be revised and improved. In analyzing the data, the researcher used descriptive qualitative research. It is adapted from Qualitative Data Analysis from Miles, Huberman & Saldana (1994) that cover condensing data, displaying data, drawing, and verifying conclusion.

Result and Discussion

The Development of Reading Materials to Promote the 4Cs

Preliminary Study

This first phase of research and development consists of three steps; document analysis, need analysis, and classroom observation.

Result of Document Analysis

The learning resource used by the teachers in teaching English for the X grade is the book published by the Minister of Education and Culture "Bahasa Inggris X". The evaluation of the book focused on the contents especially to see the correlations between the syllabus, the basic competences, the objectives and the tasks and of course the effectiveness of the materials in promoting the critical thinking. It was done to every chapter to see the detail correlation within the points of evaluation. The tasks mostly designed the same from chapter to chapter but there are also some tasks that are only mentioned in certain chapters. The results of the textbook evaluation show that there are four chapters need supplementary reading materials to promote the critical thinking (chapter 1,5,8,12).

Need Analysis

Results of Teacher's Need Analysis

There were three English teachers interviewed by the reasearcher. They are two English teachers from SMKN 1 Saptosari and one English teacher from SMKN 1 Pundong Bantul who have implemented the 2013 Curriculum. The teachers stated that supplementary reading materials is required to promote the critical thinking.

Results of Students' Need Analysis

Mostly students argued that English is difficult because it conveys too many unfamiliar words. The students mostly stated that the textbook provided by the Ministry of Education and Culture has many shortages as in the lay out, the vocabulary, the texts, and the tasks. They stated that the elaboration of tasks in the textbook need to be improved. All of the students agreed that the supporting material is much needed in the teaching and learning activity.

In critical thinking mostly students stated five characteristics of the materials that they agreed would relevant to them and it became inputs to the researcher in developing the materials. They assumed that deductive and inductive, relevant and irrelevant, correlate within informations,exposure to create, convey, analyze and solve problems. They also gave suggestions for the kinds of tasks.

Classroom Observation

In general, there were three stages in the learning proccess; pre-teaching, whilst-teaching and post-teaching. In pre-teaching, the students and the teacher did some activities in preparing the teaching and learning process as checking the presence, praying, and checking the classroom conditions. In whilst-teaching, the teacher divided the activities into three steps. They are pre-reading, whilst-reading and post-reading. The activities in the teaching and learning procces tends to be teacher centered as proved by the observation sheet and the transcripts.

Developing Preliminary Products

Drafting

After collecting sufficient information, the researcher developed course grid for the basic of developing reading materials that promote the 4'Cs. It has been concluded from the textbook evaluation that the chapters that need supplementary materials were chapter 1, chapter 5, chapter 8 and chapter 12.

Draft Revision by Experts

The draft revision was based on the suggestions of the experts. The revision covers the content, the language and the lay out.

Field Testing

Field testing was conducted to validate the supplementary materials. The field testing has been done to class X TKJ A in the seventh to tenth period on Tuesday, 24th April 2018. The lesson plan was designed in 2013 Curriculum version in which the learning phase cover observing, questioning, collecting data, associating and communicating should be covered in a lesson. There were three stages in the learning proccess; pre teaching, whilst-teacing and post teaching. In pre-teaching, the students and the teacher did some activities in preparing the teaching and learning process as checking the presence, praying, checking the classroom conditions. In whilst-teaching, the teacher divided the activities into three steps. They are pre-reading, whilst-reading and post-reading.

In pre-reading, the students made predictions about the topics by observing the pictures and answering questions that have been provided in textbook. The students guessed the pictures and implied their opinion concerning with the pictures. In this phase, the students learn how to think critically, communicative and collaborative since they tried to predict by working in groups. In whilst-reading, the students did some tasks as the main activities. The first task was reading the text by jig-saw reading. In jig-saw reading, the students divided into groups and they read the text. After reading the text, they discussed the contents, identifying the main ideas and new vocabularies and shared with other groups.

The next task is differentiating the relevant and irrelevant information based on the text. In this phase the students tried to understand the statement and analyzed wether the information is relevant or

irrelevant. This activity trained the students to think critically in which they tried to understand interconnections within thoughts based on situations. The next activity was reading comprehension, the students answered the questions that designed in *HOT* level. The mind mapping activity became the most interesting task for students. They had chance to make their own life mind mapping. The students made the mind mapping and they presented to their friends. This task trained the students to think critically and creative. They tried to relate any concepts, situations, and made summary about what they have read. To make the students understand more about the topics, the tasks were continued with reading the second text.

In post-reading, the students drew conclusion about what they have learned during the teaching and learning process. They found the social function, the text structure and the language features of recount text. It was the inductive teaching and learning in which the students were exposed with the materials first and found the conclusion. In post-teaching, the students made reflection about what they have learned by writing on the papers provided by the teacher.

Final Product

The first part of the developed material is the description of learning objectives and observation phase (Let's Focus). This task let the students make prediction about the topic by answering the provided questions. Here, the students learn to think critically.

Unit 8
How Could They be So Successful?

Objectives
At the end of the learning process, the students are able to:

1. Apply the social function, text structure and language features of recount text based on the context.
2. Differentiate relevant and irrelevant information related based on the topic.
3. Summarize any concepts from different situations.
4. Analyze the social function, text structure and language features of recount text based on the context.
5. Have the 4 Cs (Critical thinking, creative and innovative, communication and collaboration) by doing the reading materials provided.

Let's Focus
Observe these following pictures and discuss with your friends by answering the following questions:

A **B** **C**

Questions

1. Do you know who the person is?
2. What do you know about her/him?
3. What is he/she?
4. What is his/her specialty?
5. Do you want to know more about her/him?

The first task is jig saw reading in which the students are given chance to work in group in reading and identify the main ideas of each paragraph. Here the students are trained to think critically, being communicative and collaborative.

A. Task 1
Let's Read and Explore!
Do Jig Saw Reading!
Make up group of 3 to 4 students. One group read the passage and later discuss with group about what you have read!

Merry Riana - Successful Female Motivator.

Merry Riana is one of the most successful Asian female entrepreneurs and motivators who comes from Indonesia. She was born on May 29, 1980 in Jakarta. Her father is Dr. Susanto Soemodiputro and his mother is Lynda Senjaya. As the oldest child in the family, she should be a role model in her family so that her brother and her sister could imitate her.

Merry Riana entered El Bono Puloas Elementary School and continued her study to Santa Ursula Junior and Senior High School. After graduating from high school, she began studying in Electrical and Electronic Engineering (ESE) at Nanyang Technological University (NTU) Singapore in 1998.

Without adequate preparation of funds, Merry borrowed funds from the Government Bank of Singapore. To save money, Merry ate only instant noodles in the morning, lunch with 2 pieces of bread without jam, join seminars and gathering at night for the sake of free dinners even she drank tap water at campus. She worked by distributing flyers on the street, being a flower shopkeeper and serving Banquet at the hotel.

She tried various business opportunities. She tried her luck with the business of making thesis, MLM business, trying to play stock which all ended in failure. Merry had even lost 10,000 dollars when turning his money in the stock business. When Merry began his career as a financial adviser, he had to grapple with a number of challenges and obstacles. Without feeling overwhelmed with the possibility of failure or necessity to succeed, Merry decided to focus on the experiences and lessons she got during the early phases of her career. Until finally she succeeded as a Financial Consultant who sells financial products and banking such as insurance, credit card deposits, savings, etc. In the first six months of his career at Prudential, Merry managed to pay off her debt of 40 thousand Singapore dollars.

Merry was later awarded the Top New Advisory Award. Merry then started his own business after being appointed manager by renting an office and owning his own employees then he founded MRO (Merry Riana Organization) a financial service company. In addition, he also founded MRO Consultancy engaged in training motivation and book printing based in Singapore. In 2003, Merry received the award for Top Agency of the Year award and Top Rookie Agency award.

Adapted from <https://www.kingshighway.com/2013/02/biography-merry-riana-motivator/>

Task 2
Fill in the table with the results of the discussion in Jig Saw reading!

Paragraph	Main Ideas	New Vocabulary
1		
2		
3		
4		
5		

The third task is differentiating relevant and irrelevant information. It is one of indicators in critical thinking.

Task 3

Let's Identify!
Identify whether the following statements are relevant or irrelevant information based on the text!

No	Statements	R/IR (Relevant/Irrelevant)	Paragraph
1	She did a lot of efforts to be independent while studying in Singapore.		
2	She kept trying to find any jobs to support her study.		
3	She grew as a girl without goals and life vision.		
4	Merry Riana dedicated her life to social works.		
5	Merry Riana found many obstacles in starting her jobs but she kept trying.		
6	She failed in motivating other people.		

The next task is reading comprehension with *HOTS* level questions. Here the students are exposed with the process of thinking critically and being creative in conveying ideas. The way of working in group also lead the students learn to be collaborative and communicative. The task of relating the statements with the characters give the students learn to relate any concepts based on the context.

Task 4

Let's Answer the Questions!
Answer these following questions based on the information you got from the text!

1. What is the text about?
2. What do you think of Merry Riana?
3. List the positive characters of Merry Riana!
4. In which parts of Merry Riana biography that prove she was an independent woman?
5. Do you think that planning is important for her future? Why?
6. Can you mention other inspiring persons in Indonesia? In what speciality field are they?

Task 5

Relate this statement with the characters that Merry Riana have!

No	Statements	Characters
1	As the oldest child in the family, she should be a role model in her family so that her brother and her sister could imitate her.	

Critical thinking and creativity can be developed more by giving the next task “creating mind map”. Here the students are given chance to use their knowledge and their competencies in making conclusion as well as analyze the text into the real context.

Task 6

Let's Make a Mind Map!
To understand the life of Merry Riana, compose a mind map with your partners and at the same time, make your own mind map based on your life efforts so far and your future plans!

Task 7

Read this following text and discuss with your friends!

Nadim Makarim

Nadim was born in Singapore, July 4, 1984. His father is Nono Anwar Makarim who came from Pekalongan who work as a lawyer and his mother is Atika Algardie from Pasuruan who works in the field of non-profit. Nadim Makarim has two sisters. Nadim Makarim's wife is Franka Franklin, they married in 2014 ago.

Task 7

Fill in this tabel to compare the profile of the figures!

Focus on	Merry Riana	Nadim Makarim
Complete Name		
Origin		
Field of Work		
Efforts/Positive Attitudes		
The advantages of his/her innovation to society		

Task 8

Make conclusion about the social function, structure of the text and language features of recent text!

To develop the critical thinking more, the tasks continued by comparing the two texts. By comparing the two texts, the students try to analyze different concepts and contexts. Here they learn to think critically and being creative.

The Efficacy of the Supplementary Reading Materials.

Interpreting Information Through Best Analysis

This competency was trained in the beginning of the activity in which the students were exposed with pictures and let the students guessed. It leads the students to make predictions and correlate their

previous knowledge. From the classroom interaction and the results of students' works, the students are able to do the activity well. The activity is effective in promoting critical thinking from this indicator.

Understanding interconnections within thoughts based on situation and differentiating relevant and irrelevant information.

This indicator is formulated into certain tasks. The students are able to differentiate relevant and irrelevant information and answer *HOT* level questions. The students need to analyze the information and it continued with the task of finding the information from the texts. To promote this competency, the researcher also formulated a task in which the students should relate the activities with the characters in the real context.

Using Inductive-deductive way of thinking

The students made conclusions about what they after they observed the examples and did some tasks so they thought from the specific terms into the general. Here they learn to think inductively.

Conclusion

This research is fulfilled the criteria of RnD as it consists of three main stages as preliminary study, development of preliminary product, and field testing. The result of the try out convinced that the product of this research is effective, beneficial and appropriate as a reading material that promote the 4'Cs. The developed supplementary reading materials also designed with the consideration of how good materials can achieve impacts as proposed by Tomlinson (1998) that include novelty, variety, attractive presentation, appealing content and achievable challenge.

To sum it up, The results of this research can be used as the additional learning resources in any Vocational High Schools not merely the students of SMKN 1 Saptosari since the process of developing the materials has been done related to larger aspects. The development of the supplementary reading material to promote the 4'Cs in this research were designed as the implementation of the researcher's efforts in creating learning resources that support the 21st century education goals in Indonesia.

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